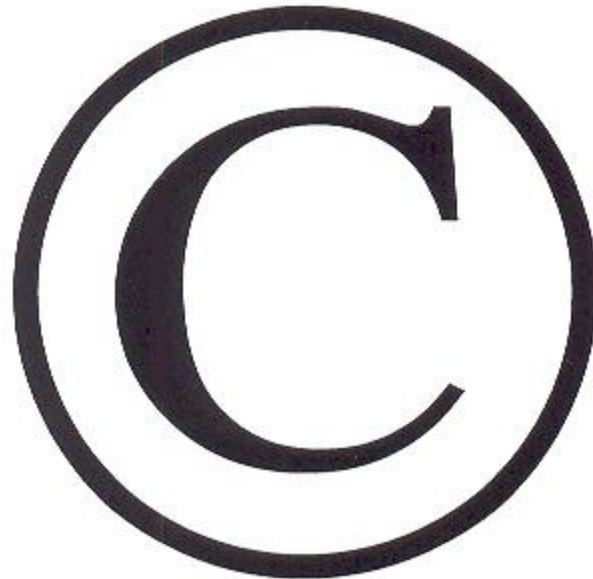


CSE/ISE 312

Intellectual Property (Part 1)



Outline

- Principles, Laws, and Cases
- Responses to Copyright Infringement
- Search Engines and Online Libraries
- Free Software
- Patents for Inventions in Software

What is Intellectual Property

- The intangible creative work, not its particular physical form
- Value of intelligence and artistic work comes from creativity, ideas, research, skills, labor, non-material efforts and attributes the creator provides
- Protected by intellectual property laws -
a set of exclusive rights granted by a government to a creator or assignee for a limited period of time

Legal Protection to IP

- Copyright – written or artistic expressions fixed in a tangible medium. Books, poems, songs, movies, works of art. Protects the manifestation.
- Patents – invention of any new, useful, and non-obvious process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof. Protects the idea.

Legal Protection to IP

- Trade marks – name, word, logo, symbol, etc. used to identify a product and/or service. Protects both manifestation and idea.

Patent

- You register with the government. Can register in foreign countries. US patent is issued by USPTO
 - Registration may take more than a year
- You gain the right to exclude others from making, using, or offering for sale the invention
- Patents generally last for 20 years
- Once you hold a patent, others can apply to license your invention
- Types - Utility, design, chemical, software, etc.

Copyright Holders' Exclusive Rights

- A copyright is valid for the lifetime of the author plus 70 years
- making copies
- distributing copies
- producing derivative works, such as translations into other languages or movies based on books
- performing the work in public (e.g. music, plays)
- displaying the work in public (e.g. artwork, movies, computer games, video on a Web site)

Copyright Holders' Exclusive Rights

“To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries;”

- US Constitution

Challenges of New Technology

Digital technology and the Internet has made copyright infringement easier and cheaper

- Easy to copy digitized material and each copy is a “perfect” copy
- Storage is getting more and more inexpensive
- Scanners allow us to change the media of a copyrighted work, converting printed text, photos, and artwork to electronic form

Challenges of New Technology

- New compression technologies have made copying large files (e.g. graphics, video and audio files) feasible
- Web makes it easy to find, download, and post material
- High-speed Internet and peer-to-peer feed large files and users
- New tools allow us to modify graphics, video and audio files to make derivative works

Technology's impact on IP rights

The problem looks different from different perspectives

- To consumers - want content cheaply and conveniently
- To writers, singers, artists, actors, production, marketing, and management - be paid for the time and effort they put in creation
- To the entertainment industry, publishers and software companies - protect investment and revenues

Technology's impact on IP rights

- To amateurs using others' works - continue to create without unreasonably burdensome requirements and threats of lawsuits
- To scholars and advocates - to protect intellectual property, but also fair use, reasonable public access, and the opportunity to use new technologies to the fullest to provide new services and creative work

Copyright History

- 1790 first copyright law passed in US (1710 in UK)
- Copyright Act of 1909 defined an unauthorized copy as a form that could be seen and read visually
- 1976 and 1980 copyright law revised to include software and databases that exhibit "authorship" (original expression of ideas), included the "Fair Use Doctrine"
 - 1976 law stated that the copy is in violation if the original can be perceived, reproduced, or otherwise communicated by or from the copy, directly or indirectly – an improvement over “seen and read visually”

Copyright History (cont.)

- 1982 high-volume copying of records and movies became a felony
- 1992 making multiple copies for commercial advantage and private gain became a felony
 - >10 copies, worth >\$2,500 get up to 5 yrs in jail
- 1997 No Electronic Theft Act made it a felony to willfully infringe copyright by reproducing or distributing one or more copies of copyrighted work with a total value of more than \$1,000 within a six-month period (profit provision dropped)

Copyright History (cont.)

- 1998 Digital Millennium Copyright Act (DMCA)
 - Anti-circumvention provisions: prohibits making, distributing or using tools to circumvent technological copyright protection systems
 - Safe-harbor provisions: Protects Web sites if they remove material when asked by the copyright holder, which offered protection from some copyright lawsuits for Web sites where users post materials
- 2005 Congress made it a felony to record a movie in a movie theater

Fair Use Doctrine (1976 Law)

- Goals of copyright law is to promote production of useful work and encourage the use and flow of information
- Examples of fair use:
 - Quoting a portion in a review
 - Education (even making multiple copies for classroom use)

Fair Use Doctrine (1976 Law)

- Four factors to determine fair use
 1. Purpose and nature of use – e.g., commercial
 2. Nature of the copyrighted work (novel less likely than factual)
 3. Amount and significance of the portion used
 4. Effect of use on potential market or value of the copyrighted work (will it reduce sales of work?)
- No single factor alone determines, not all factors given equal weight, depends on circumstances

Ethical Arguments About Copying

- Unlike physical property, copying or distributing a song, video, or computer program does not decrease the use or enjoyment by another person
- Copying can decrease the amount of money that the copyright owner earns
- Although copying enables users to try out products, may encourage sales, businesses and organizations make marketing decisions about products, not consumers
- There are many arguments for and against unauthorized copying.

Significant Cases (1)

Sony v. Universal City Studios (1984)

- Sony made Betamax video cassette recording (VCR) machines, which were used to record movies shown on TV
- Supreme Court decided that the makers of a device with legitimate uses should not be penalized because some people may use it to infringe on copyright
- Supreme Court ruled that recording a movie for later viewing was fair use

Significant Cases (1)

- Arguments against fair use
 - People copied the entire work
 - Movies are creative, not factual
- Arguments for fair use
 - The copy was for private, noncommercial use and generally was not kept after viewing
 - The movie studios could not demonstrate that they suffered any harm
 - The studios had received a substantial fee for broadcasting movies on TV, and the fee depends on having a large audience who view for free

Significant Cases (2): Napster

Sharing music: the Napster case (2001)

- Napster provided a way for users to exchange music files (no files retained on Napster site)
- Metallica filed suit against Napster – followed by A&M
- Was the sharing of music via Napster fair use?

Significant Cases (2): Napster

- Napster's arguments for fair use
 - The Sony decision allowed for entertainment use to be considered fair use
 - People make copies for personal, not commercial, use
 - Did not hurt industry sales because users sampled music on Napster and bought the CD they liked

Napster (cont'd)

- RIAA (Recording Industry Association of America)'s arguments against fair use
 - "Personal" meant very limited use, not trading with thousands of strangers
 - Songs and music are creative works and users were copying whole songs
 - Claimed Napster severely hurt sales
- Court ruled sharing music via large-scale copying on Napster violated copyright

Was Napster Responsible?

- Was Napster responsible for the actions of its users?
- Napster's arguments
 - It was the same as a search engine, which is protected under the DMCA (from responsibility for copyright violations by its users)
 - They did not store any of the MP3 files
 - Their technology had substantial legitimate uses in promoting new bands and artists who were willing to let users copy their songs

Was Napster Responsible (cont'd)

- RIAA's arguments
 - Companies are required by law to make an effort to prevent copyright violations and Napster did not take sufficient steps
 - Napster was not a device or new technology and the RIAA was not seeking to ban the technology
- Court ruled Napster liable because it had the right and ability to supervise its system, including copyright infringing activities

Significant Cases (3)

“Look and feel”

- Refers to features such as pull-down menus, windows, icons, and finger movements and specific ways they are used to select or initiate actions
- The trend of court decisions has been against copyright protection for “look and feel”
- The main argument in favor of protecting a user interface is that it is a major creative effort
- On the other hand, standard user interfaces increase productivity of users and programmers